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Welcome to the Australian Environmental Bulletin prepared by the U.S. Commercial Service in Australia.

This publication contains business intelligence on the Australian environmental market. The data provided in this bulletin is given solely as an information resource and does not imply endorsement by the U.S. Dept. of Commerce.

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Wimmera Malle Pipeline Project – Victoria

In the Spring 2006 issue of this bulletin we reported on The Wimmera Mallee Pipeline Project, a significant water resource management project for Australia.

Some background…

The US$375 million project involves the construction of almost 9,000 kilometers of reticulated pipeline to replace 16,000 kilometers of existing, highly inefficient open channels. The project will supply stock and domestic water to approximately 6,000 rural customers and 36 towns across a region that covers ten percent of the total land area of Victoria, from the Grampians to the Murray River.

The open channel system that currently services the Wimmera Mallee region is unsustainable. At present, 85 per cent of water in the system is wasted through seepage and evaporation. Both waterways in the region and the community have suffered as a result.

The materials required include over 7,000km of PVC pipe, hundreds of kilometers of steel pipe together with approximately 40 main pumping stations and up to 100 booster pumping systems.

Since then…

Construction is scheduled to begin straight away on the project after the signing of contracts for the first stage of construction works. The contract for construction of over 1,200km of pipeline has been awarded to Mitchell Water, a

consortium of civil engineers, pipeline contractors and a pipe supplier. A separate contract has been awarded to Tyco for the supply of steel pipe required for this stage of the project.

Mitchell Water aims to complete the construction works within one year, so that customers in the area will be receiving water from the pipeline by October 2007. This is a year earlier than scheduled in the original 10-year project delivery plan. The first stage of construction works represents approximately 25 percent of the entire 8,000 km pipeline system.

The fast-tracked construction timeframe may enable water savings from the project to be realized sooner than anticipated. Up to 13,000 megalitres of water will be saved by having the first of the pipeline operational next year.

The next stage of construction works will occur in the northeast of the Wimmera Mallee region, adjacent to the Cannie Ridge and Northern Mallee Pipeline areas (Supply System 5). The process for this stage will commence by the end of 2006, with construction to start in early 2007. Water savings from these works may be in the vicinity of 11,000 megalitres.

The Wimmera Mallee Pipeline is a partnership project between the Australian Government, Victorian Government, and the regional water authority Grampians Wimmera Mallee Water (GWMWater).

Camellia Recycled Water Project – New South Wales

The NSW Government is pursuing major large-scale recycled water schemes and localized recycling where it is practical and affordable. By 2015, Sydney Water Corporation estimates that the amount of wastewater recycled in greater Sydney will grow from the current 15 billion to around 70 billion liters a year.

One such scheme is the Camellia Recycled Water Project which will provide highly treated wastewater to large and medium-sized industrial and irrigation users between Sydney Olympic Park and Parramatta. The project will involve the design and construction of a recycled water treatment facility, pipelines, service reservoirs, pumping stations and related infrastructure. This scheme has the potential to save up to 6 billion liters of drinking water a year.

The following three consortia were short-listed for the project and have been invited to make detailed submissions:

- AGL joined by Agility Management and Veolia Water Australia
- Earth Tech Engineering joined by McConnell Dowell
- United Utilities and Transfield joint venture joined by Tenix Alliance and Sinclair Knight Mertz.

All three short-listed consortia are proposing to deliver recycled water to customers in the Camellia area and beyond. The proposals include established water recycling technology and innovative ideas like the use of disused gas mains for distribution.

Government support for new low emission energy technologies

The Australian Federal Government has announced funding of US$95 million for two low emission technology projects in Victoria as part of its broader planned US$1.5 billion to address the impacts of climate change.

The two projects – Solar Systems and Hazelwood power station – are the first funded and announced under the Australian Government's US$375 million Low Emissions Technology Demonstration Fund.

In a recent government media release, the Minister for Environment and Heritage, Senator Campbell stated that climate change posed a considerable challenge to Australia and that, "All low emission technologies need to be considered and, where appropriate, given opportunities to demonstrate their future capacity to reduce our greenhouse gas emissions."

The two projects are:

- Solar Systems Australia Pty Ltd: up to $75 million for a large-scale solar concentrator power project in the Mildura region. This renewable energy power station will demonstrate the use of heliostat mirrors to focus concentrated sunlight onto high-efficiency photovoltaic cells to generate electricity.

- International Power (Technologies) Pty Ltd: $50 million for its Hazelwood 2030 project. The demonstration project will retrofit brown coal drying technology, and a pilot carbon dioxide capture and sequestration facility.

The Market for hazardous waste treatment equipment

In Australia, hazardous waste represents about eight percent of the total income generated from solid waste (US$1,415 million). The collection and transport of hazardous solid waste accounts for US$81.9 million while the treatment, processing and disposal of solid hazardous waste contributes US$31 million to total income.

The majority of hazardous waste is generated by the commercial, industrial and trade sectors. Sources of such waste include: hospitals; food outlets; chemical, paint and plastic manufacturers; and food processing plants. Data from New South Wales and Victoria suggests that more than 50 percent of hazardous waste is generated from the manufacturing sector and that solid hazardous waste constitutes up to 60 percent of the total hazardous waste stream.

While current statistics are not available, it is believed that the amount of hazardous waste being disposed of in landfills has been increasing. This can, in part, be attributed to increased disposal to landfill of asbestos and low-level contaminated soil from former industrial land, produced as a result of remediation and development of land into residential uses.

U.S. developed waste treatment technologies are already highly regarded in Australia. In light of the favorable competitive environment created by the FTA, the continuing trend to redevelop industrial land for residential uses, and increasing regulatory pressure to divert waste from landfills, U.S. firms with innovative hazardous waste treatment solutions are encouraged to explore the Australian market.

The National Pollutant Inventory – Emissions from the Petroleum refining industry

The National Pollutant Inventory (NPI) is an internet database designed to provide the community, industry and government with information on the types and amounts of certain chemicals being emitted into the environment. Australian industrial facilities using more than a specified amount of the chemicals listed on the NPI reporting list were required to begin estimating emissions of these substances from July 1998.

The NPI assists with policy and program formulation at all levels of government. It has also helped focus attention on certain manufacturing processes which could be cleaner or more efficient.

Emissions from the Petroleum Refining Industry

A total of 12 petroleum refining facilities reported on 50 substances. A partial list of the substances emitted follows:

Substance	Total (Kg/year)
Sulfur Dioxide	18,,000,000
Total Volatile Organic Compounds	17,000,000
Carbon Monoxide	8,600,000
Oxides of Nitrogen	6,400,000
Particulate Matter 10.0 um	1,900,000
n-Hexane	530,000
Toluene	390,000
Xylenes	330,000
Methyl ethyl ketone	210,000
Benzene	120,000
Cyclohexane	100,000

Flouride compounds	80,000
Ethylbenzene	78,000
Total Nitrogen	63,000
Formaldahyde	41,000
Hydrogen Sulfide	27,000
Cumene	21,000
Ammonia	20,000
Chlorine	19,000
Polycyclic aromatic hydrocarbons	5,900
Total Phosphorous	3,500

Source: National Pollutant Inventory (www.npi.gov.au)

Contaminated Land Management in Queensland

In Queensland, contaminated land or land that has the potential to be contaminated is recorded on the Environmental Management Register (EMR) or Contaminated Land Register (CLR) and is made publicly available. All applications for redevelopment of potentially contaminated land need to be referred to the Queensland EPA for review.

In 2003, the Queensland EPA had reported that the number of development applications reported to it had been increasing every year primarily due to the growth of urban centers into surrounding industrial areas especially in south-east Queensland.

Remediation of sites involves either full clean-up and approved off-site disposal or safe on-site management of contamination under the conditions of a statutory site management plan (SMP). Strategies used are consistent with the *National Environment Protection (Assessment of Site Contamination) Measure 1999* (NEPM) and EPA guidelines.

Part of the role of the Queensland EPA is to ensure that information is provided to land purchasers by requiring that property owners advise them if land is listed on either the EMR or the CLR. Most of the EMR and CLR searches are associated with property transactions. However it should be noted that land does not necessarily require remediation as a result of listing on the EMR or before sale. Investigations to have land removed from the EMR are undertaken voluntarily by the landowner/developer or under notice issued by the EPA to abate serious health or environmental risk.

Remediation is usually associated with redevelopment proposals. Contaminated land work must be conducted by professionals in accordance with national and state guidelines. A permit must be obtained from the EPA before any contaminated soil is removed from land for treatment or disposal. Remediation works are undertaken to ensure that land will be suitable for the proposed use.

Given the concentration of coal mining in Queensland, it is understandable that the EPA is also undertaking research into the assessment of contaminated land associated with the mining industry and the implications for post-mining land uses such as low-intensity grazing, environmental effects of mining contaminants, and health effects from ingestion of contaminated soil by livestock.

The Australian remediation industry relies, in part, on high-technology goods to supply remediation services. Technology and methods used in the North American market are recognized as more advanced than Australian methods. Opportunity therefore exists for U.S.-based technology to improve the services currently available in Australia.

Urban Water Industry

Australia's urban water industry is serviced by 300 utilities. Approximately, 70 percent of the population is services by 26 utilities. The 200 smallest utilities collectively provide services to 3 million people.

New South Wales

Water supply and sewerage services to metropolitan Sydney, which has a population of 4 million, are provided by Sydney Water (www.sydneywater.com.au). Sydney Water has four water treatment plants that are managed under BOO schemes. The Hunter Water Corporation (www.hunterwater.com.au) provides services to about 500,000 people from five local government areas – Newcastle, Lake Macquarie, Maitland, Cessnock, and Port Stephens. Other areas within New South Wales are handled by two water boards and a few local councils. Rural water suppliers tend to be private co-operatives or irrigators.

Victoria

Victoria was the first State to corporatize its water assets in 1992. The main water authority, Melbourne Water was divided into a bulk supplier and three retailers – Yarra Valley, South East, and City West.
Melbourne Water (www.melbournewater.com.au) services a population of nearly 3.5 million. The business is responsible for managing US$6.3 billion in water supply, sewerage, and drainage assets. South East Water (www.southeastwater.com.au) provides services to 1.3 million people in the south-east region of Melbourne. Yarra Valley Water (www.yvw.com.au) provides services to 1.6 million people in Melbourne's northern and eastern suburbs. City West Water (www.citywestwater.com.au) is responsible for the provision of drinking water, sewerage, trade waste, and recycled water services to 276,000 residential and 31,000 industrial/commercial customers in Melbourne's central business district and inner and western suburbs.

Queensland

Water supply and sewerage services are provided by 126 local authorities and 31 Aboriginal community councils. Brisbane City Council (www.brisbane.qld.gov.au) is the largest and still owns and manages its plants. Rural water supply is managed by the State Government.

South Australia

South Australia Water4 Corporation (www.sawater.com.au), is wholly owned by the government of South Australia, and delivers water and wastewater services to almost 1.4 million people. It has an annual turnover of about US$560 million, and assets of more than $5 billion. In Adelaide, the management and maintenance of water assets has been outsourced to United Water under a 15.5 year contract. This involves responsibility for six water treatment plants, five wastewater treatment plants, over 400,000 service connections, 9,900km of water mains and 7,000km of wastewater mains.

Western Australia

The WA Water Corporation (www.watercorporation.com.au) is wholly owned by the Government of Western Australia, it is unique in that it provides water and wastewater services to the entire state. This encompasses the capital Perth and hundreds of towns spread over 2.5 million square kilometres. The corporation also takes responsibility for providing drainage and irrigation services to businesses and farms across the state. There are however, 22 small local authorities and 10 towns that receive services from mining companies.

End of report